COSEWIC
Status Appraisal Summary

on the

Puget Oregonian
Cryptomastix devia

in Canada

EXTIRPATED
2013

COSEWIC
Committee on the Status
of Endangered Wildlife
in Canada

COSEPAC
Comité sur la situation
des espèces en péril
au Canada

COSEWIC status appraisal summaries are working documents used in assigning the status of wildlife species suspected of being at risk in Canada. This document may be cited as follows:

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COSEWIC
Assessment Summary

Assessment Summary – May 2013

Common name
Puget Oregonian

Scientific name
Cryptomastix devia

Status
Extirpated

Reason for designation
This large land snail is known in Canada from only three old records (1850-1905) from Vancouver Island and the Lower Fraser Valley of British Columbia. Extensive searches within the historical range have failed to find the species.

Occurrence
British Columbia

Status history
Designated Extirpated in November 2002. Status re-examined and confirmed in May 2013.

COSEWIC
Status Appraisal Summary

Cryptomastix devia
Puget Oregonian Escargot du Puget
Range of occurrence in Canada (province/territory/ocean): British Columbia

Status History:
Designated Extirpated in November 2002. Status re-examined and confirmed in May 2013.

Evidence (indicate as applicable):

Wildlife species:
Change in eligibility, taxonomy or designatable units: yes ☐ no ☒

Explanation:

There is no change in eligibility, scientific taxonomy, or designatable units. However, the English common name is "Puget Oregonian" (not "Puget Oregonian Snail"), following common usage, Turgeon *et al.* (1998), and the recommendation of the Molluscs Species Specialist Subcommittee. The French name was incorrectly translated "limace de Puget" (COSEWIC 2002; correct elsewhere); it should be "escargot du Puget".

Range:
Change in Extent of Occurrence (EO): yes ☐ no ☒ unk ☐
Change in Index of Area of Occupancy (IAO) : yes ☐ no ☒ unk ☐
*Change in number of known or inferred current locations**: yes ☐ no ☒ unk ☐
Significant new survey information yes ☒ no ☐

Explanation:

Despite recent searches, there remain no known populations of Puget Oregonian in Canada (Durand; Gelling; Ovaska; Heron; Millikin; Ramsay; Nernberg *all* pers. comm. 2011).

Since the last assessment of Puget Oregonian (COSEWIC 2002), there has been a considerable interest in terrestrial gastropods by local and provincial governments, conservation organizations, consultants under contract to government and other clients, and naturalists. Within the historical range of Puget Oregonian in the Lower Fraser Valley and on southern Vancouver Island, numerous site surveys were made for terrestrial gastropods since 2000. Many of these surveys targeted Oregon Forestsnail (*Allogona townsendiana*), which is believed to occupy similar habitats as Puget Oregonian (COSEWIC 2002), or were more general, targeting all species of terrestrial gastropods (Ovaska pers. comm. 2011). Some invertebrate surveys (e.g., Parkinson *et al.* 2009) found terrestrial gastropods only incidentally (Heron pers. comm. 2011). Fieldworkers surveying for Oregon Forestsnail and terrestrial gastropods in general are aware of and look for Puget Oregonian during their surveys (Forsyth pers. obs.). Because surveys for Oregon Forestsnail should detect Puget Oregonian both species were reassessed at the same time using the same search effort (Figure 1) as evidence for status.

Within the historical range, areas surveyed on southern Vancouver Island included Capital Regional District parks, Department of National Defence (DND) lands, industrial forestry lands, Parks Canada

lands, and Crown land; and in the Lower Fraser Valley, municipal forests (Matsqui and Mission), DND land and Crown land were surveyed (Ovaska and Sopuck 2006, 2007, 2008, 2009; Bains *et al.* 2009; Parkinson *et al.* 2009; Sopuck *et al.* 2010; Astley pers. comm. 2011; Durand pers. comm. 2011; Heron pers. comm. 2011; COSEWIC 2013). Since 2000 a minimum of 1083 sites were surveyed for terrestrial gastropods in the Lower Fraser Valley (232 sites) and on Vancouver Island and the southern Gulf Islands (400 sites) (COSEWIC 2013). From 2009–2011, searches targeting Oregon Forestsnail amounted to a minimum of 827 hours following 525 km of wandering transects (see Table 2 in COSEWIC 2013 for details). Data for much of the additional work by biologists under contract to private landowners are not available, or are not quantifiable.

Surveys for terrestrial gastropods outside the historical range of Puget Oregonian, including some of the southern Gulf Islands, the west coast and northern Vancouver Island, and the Sunshine Coast, but also southeast BC, have failed to locate the species (Matthias pers. comm. 2011; Ovaska pers. comm. 2011; Forsyth pers. comm. 2011). Appendix 1 maps some of the search effort for terrestrial gastropods in BC and neighbouring provinces and territories.

* Use the IUCN definition of "location"

Population Information:

Change in number of mature individuals:	yes ☐ no ☒ unk ☐
Change in total population trend:	yes ☐ no ☒ unk ☐
Change in severity of population fragmentation:	yes ☐ no ☒ unk ☐
Change in trend in area and/or quality of habitat:	yes ☐ no ☒ unk ☐
Significant new survey information	yes ☒ no ☐

Explanation:

No additional data since previous assessment, although searches for the presence of the species (see above) and declining trends in the quality of habitat (see below) have continued.

Threats:

Change in nature and/or severity of threats: yes ☒ no ☐ unk ☐

Explanation:

The cause of the extirpation of Puget Oregonian in Canada is uncertain, but habitat loss and fragmentation were identified as a threat in the US (COSEWIC 2002). Within the historical range of the species, removal and fragmentation of suitable habitat continues. Historically this was due to conversion of forest to farmland, but nowadays, urbanization is the main cause of habitat loss. In the Lower Fraser Valley, new large-scale communities continue to be developed in Mission, Abbotsford and Chilliwack (COSEWIC 2013). In these communities, large areas of high-quality terrestrial snail habitat are now developed, have development potential or are at the proposal stage (Durand pers. comm. 2011; COSEWIC 2013). Since the previous report, the severity of the threats has increased.

Protection:

Change in effective protection: yes ☐ no ☒

Explanation:

Under the *Species at Risk Act,* Puget Oregonian was placed on Schedule 1 as Extirpated. The S-Rank in BC is SX (extirpated) (BCCDC 2011). A goal of the recovery strategy is to protect habitat and mitigate any threats if a population was found (BCIRT 2008).

Rescue Effect:

Change in evidence of rescue effect: yes ☐ no ☒

Explanation:

No additional data since previous assessment. The recovery strategy includes the exploration of the feasibility and need to re-establish the species in Canada from Washington State populations by 2017 (BCIRT 2008). Natural dispersal north from the United States is very unlikely to occur. A petition to list the species in the US under their *Endangered Species Act* was submitted in 2008 (Curry *et al.* 2008; USFWS 2011). While a listing decision was made on some of the aquatic snails in the petition in September 2012 (USFW 2012), the decision on the terrestrial species, including Puget Oregonian, is expected in fiscal year 2013.

Quantitative Analysis:

Change in estimated probability of extirpation: yes ☐ no ☐ unk ☒

Details:

No data available

Summary and Additional Considerations: [e.g., recovery efforts]

Puget Oregonian is extirpated from Canada. There are no records of this species since the early 1900s. This species has not been observed, both inside and outside its historical range, despite searches by skilled observers within the last 10 years.

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Author of SAS: Robert G. Forsyth

TECHNICAL SUMMARY

Cryptomastix devia
Puget Oregonian Escargot du Puget
Range of occurrence in Canada (province/territory/ocean): BC

Demographic Information

Generation time (usually average age of parents in the population; indicate if another method of estimating generation time indicated in the IUCN guidelines(2008) is being used)	> 1 yr
Is there an [observed, inferred, or projected] continuing decline in number of mature individuals? No individuals have been observed in Canada for over 100 years, despite recent, continued searches.	Not applicable
Estimated percent of continuing decline in total number of mature individuals within [5 years or 2 generations] No individuals have been observed in Canada for over 100 years, despite recent, continued searches.	Not applicable
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over the last [10 years, or 3 generations]. No individuals have been observed in Canada for over 100 years, despite recent, continued searches.	Not applicable
[Projected or suspected] percent [reduction or increase] in total number of mature individuals over the next [10 years, or 3 generations]. No individuals have been observed in Canada for over 100 years, despite recent, continued searches.	Not applicable
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over any [10 years, or 3 generations] period, over a time period including both the past and the future.	Not applicable
Are the causes of the decline clearly reversible and understood and ceased?	Not applicable
Are there extreme fluctuations in number of mature individuals?	Not applicable

Extent and Occupancy Information

Estimated extent of occurrence	0 km²
Index of area of occupancy (IAO) (Always report 2x2 grid value).	0 km²
Is the total population severely fragmented?	Not applicable
Number of locations*	0
Is there an [observed, inferred, or projected] continuing decline in extent of occurrence?	Not applicable
Is there an [observed, inferred, or projected] continuing decline in index of area of occupancy?	Not applicable
Is there an [observed, inferred, or projected] continuing decline in number of populations?	Not applicable
Is there an [observed, inferred, or projected] continuing decline in number of locations*?	Not applicable
Is there an observed, inferred, and projected continuing decline in area, extent and quality of habitat? Declines in habitat quality continue.	Yes

* See Definitions and Abbreviations on COSEWIC website and IUCN 2010 for more information on this term.

Are there extreme fluctuations in number of populations?	No
Are there extreme fluctuations in number of locations*?	No
Are there extreme fluctuations in extent of occurrence?	No
Are there extreme fluctuations in index of area of occupancy?	No

Number of Mature Individuals (in each population)

Population	N Mature Individuals
None	0
Total	0

Quantitative Analysis

Probability of extinction in the wild is at least [20% within 20 years or 5 generations, or 10% within 100 years].	No data available

Threats (actual or imminent, to populations or habitats)

Habitat loss, degradation and fragmentation due to urban development

Rescue Effect (immigration from outside Canada)

Status of outside population(s)? Washington (S2S3) Oregon (S1)	
Is immigration known or possible?	Not known, unlikely
Would immigrants be adapted to survive in Canada?	Possibly
Is there sufficient habitat for immigrants in Canada?	Possibly
Is rescue from outside populations likely?	No

Data Sensitive Species

Is this a data sensitive species?
There are no recent data to consider. If the species records were found, the species would likely be data sensitive.

Status History

Designated Extirpated in November 2002. Status re-examined and confirmed in May 2013.

Status and Reasons for Designation

Status:	**Alpha-numeric Code:**
Extirpated	not applicable

Reasons for Designation:
This large land snail is known in Canada from only three old records (1850-1905) from Vancouver Island and the Lower Fraser Valley of British Columbia. Extensive searches within the historical range have failed to find the species.

* See Definitions and Abbreviations on COSEWIC website and IUCN 2010 for more information on this term.

Applicability of Criteria

Criterion A (Decline in Total Number of Mature Individuals): Not applicable. None found in Canada since 1905.
Criterion B (Small Distribution Range and Decline or Fluctuation): Not applicable. None found in Canada since 1905.
Criterion C (Small and Declining Number of Mature Individuals): Not applicable. None found in Canada since 1905.
Criterion D (Very Small or Restricted Total Population): Not applicable. None found in Canada since 1905.
Criterion E (Quantitative Analysis): Not applicable. None found in Canada since 1905.

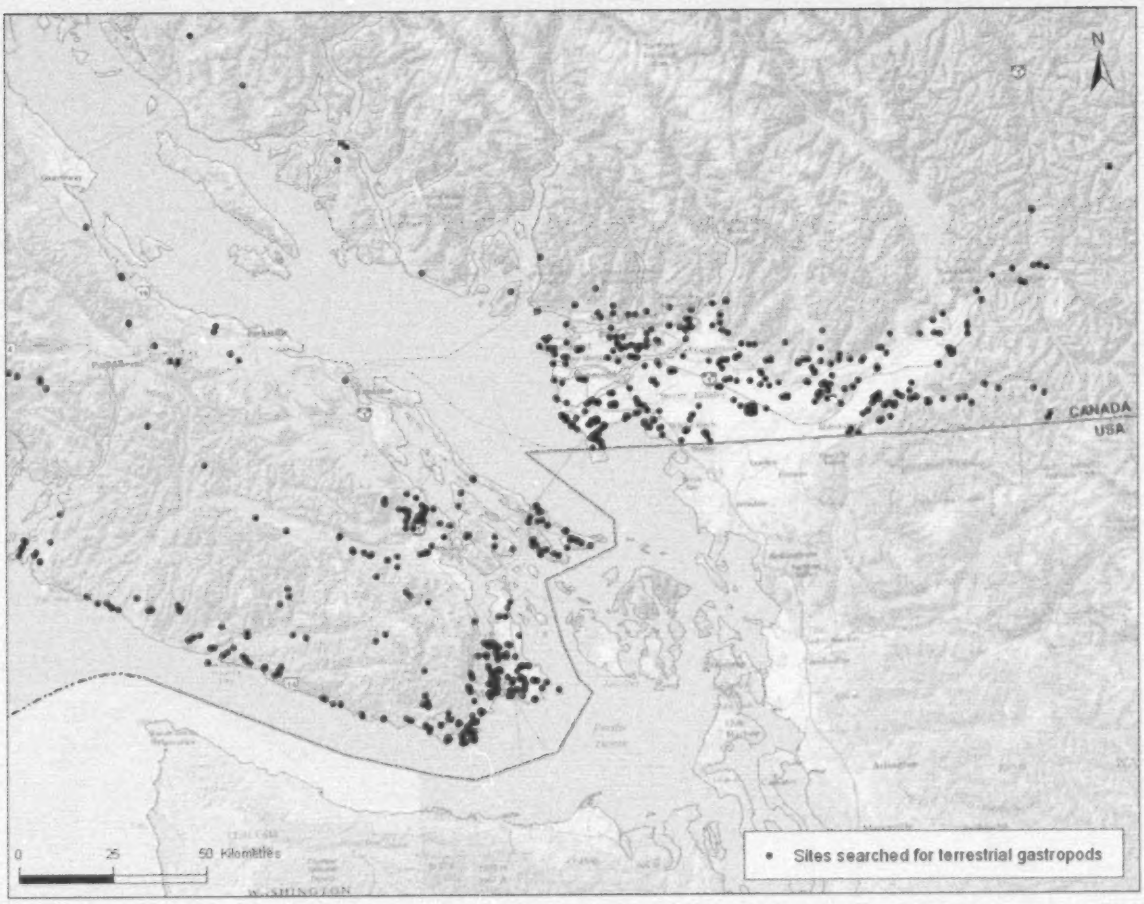
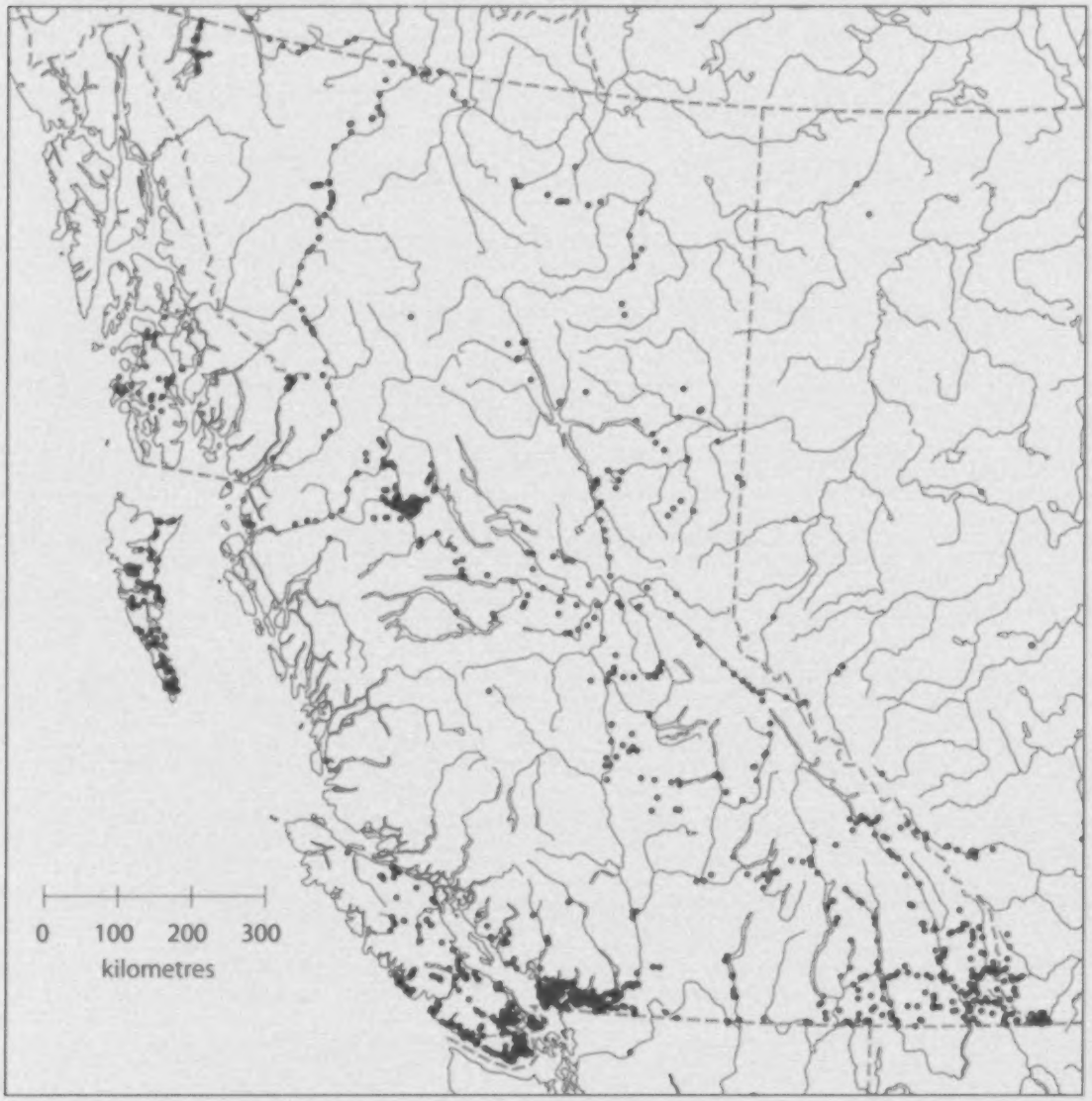


Figure 1. Search effort for terrestrial snails within and adjacent to the known range of the Oregon Forestsnail and Puget Oregonian. Data from the BCCDC (2013) up to April 2012 as well as Forsyth (unpubl. data) up to 2011 are included. This map, produced by the COSEWIC Secretariat, was modified to show the extant sites for Oregon Forestsnail and is found in COSEWIC (2013). No Puget Oregonian was found during these searches.

Appendix 1. Searches for terrestrial molluscs in British Columbia and adjacent provinces and territories from 1999 to September 2011, compiled from records from Biolinx Environmental Research Ltd., Forsyth, and Wildlife Systems Research. Dots represent sites where searches for terrestrial snails and slugs have been made, using various methodologies. (Map prepared by Forsyth.)



COSEWIC HISTORY

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list. On June 5, 2003, the *Species at Risk Act* (SARA) was proclaimed. SARA establishes COSEWIC as an advisory body ensuring that species will continue to be assessed under a rigorous and independent scientific process.

COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species, subspecies, varieties, or other designatable units that are considered to be at risk in Canada. Designations are made on native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fishes, arthropods, molluscs, vascular plants, mosses, and lichens.

COSEWIC MEMBERSHIP

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal entities (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biodiversity Information Partnership, chaired by the Canadian Museum of Nature), three non-government science members and the co-chairs of the species specialist subcommittees and the Aboriginal Traditional Knowledge subcommittee. The Committee meets to consider status reports on candidate species.

DEFINITIONS
(2013)

Wildlife Species	A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)*	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)**	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)***	A category that applies when the available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

* Formerly described as "Vulnerable" from 1990 to 1999, or "Rare" prior to 1990.

** Formerly described as "Not In Any Category", or "No Designation Required."

*** Formerly described as "Indeterminate" from 1994 to 1999 or "ISIBD" (insufficient scientific information on which to base a designation) prior to 1994. Definition of the (DD) category revised in 2006.

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